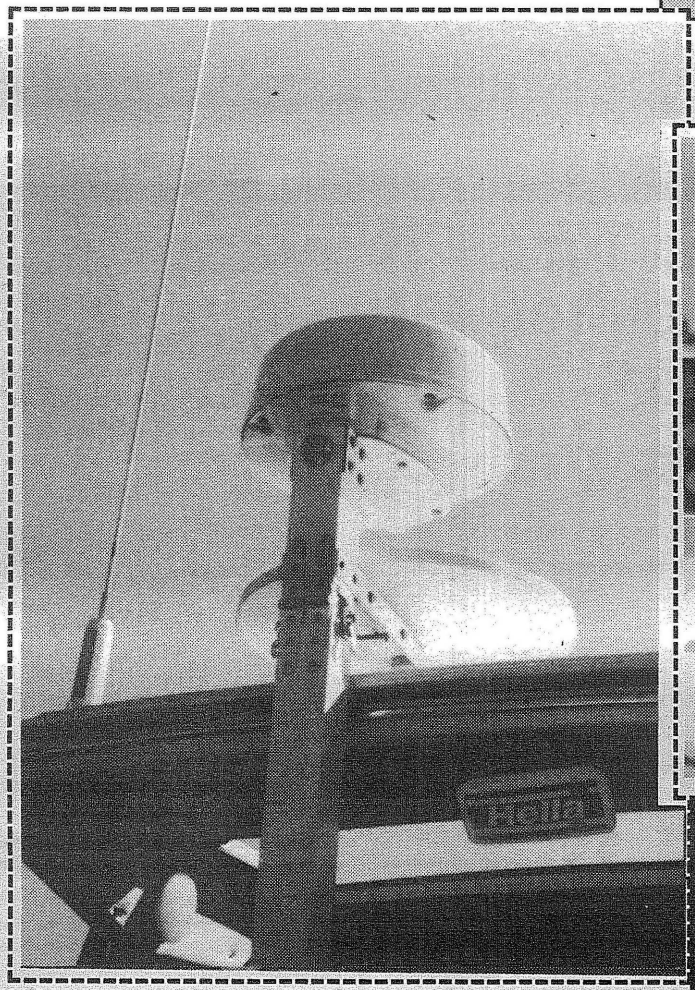
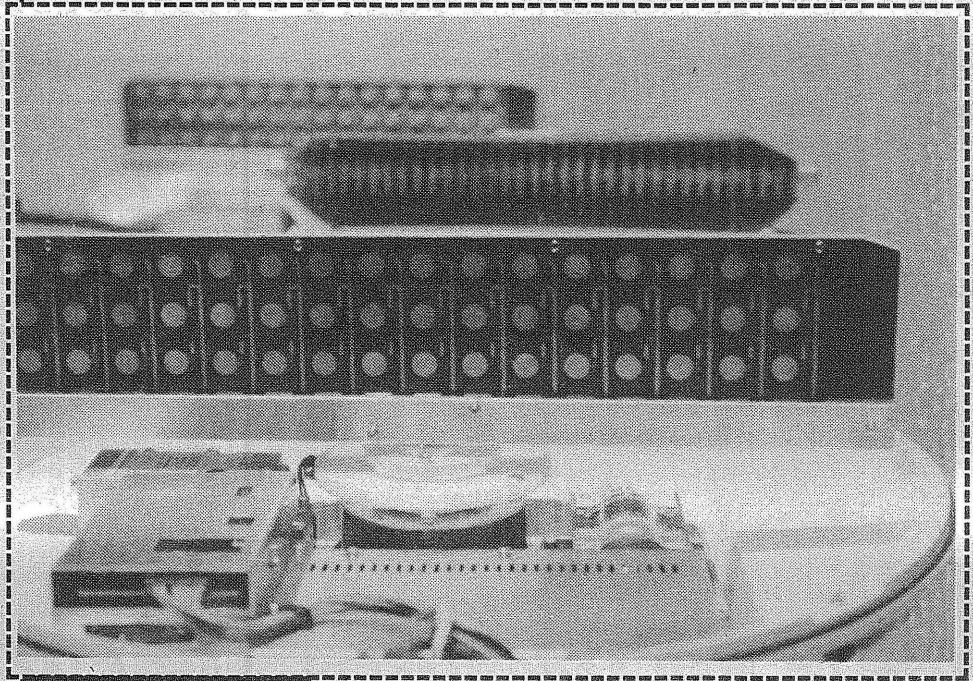
THE COMMERCIAL RADIO LICENSE —

A TICKET TO JOB OPPORTUNITIES

by Gordon West





To work on marine & aircraft radios and radar transmitters, you will need the FCC G.R.O.L.

If you are into two-way radio, you have most certainly heard about, or maybe possess one, the commercial radiotelephone license, issued by the Federal Communications Commission. It's now called a "GROL," general radiotelephone operator license, and years ago carried three different grades of proficiency — first class radiotelephone, second class radiotelephone, and third class radiotelephone. Those three classes are now merged into one big GROL.

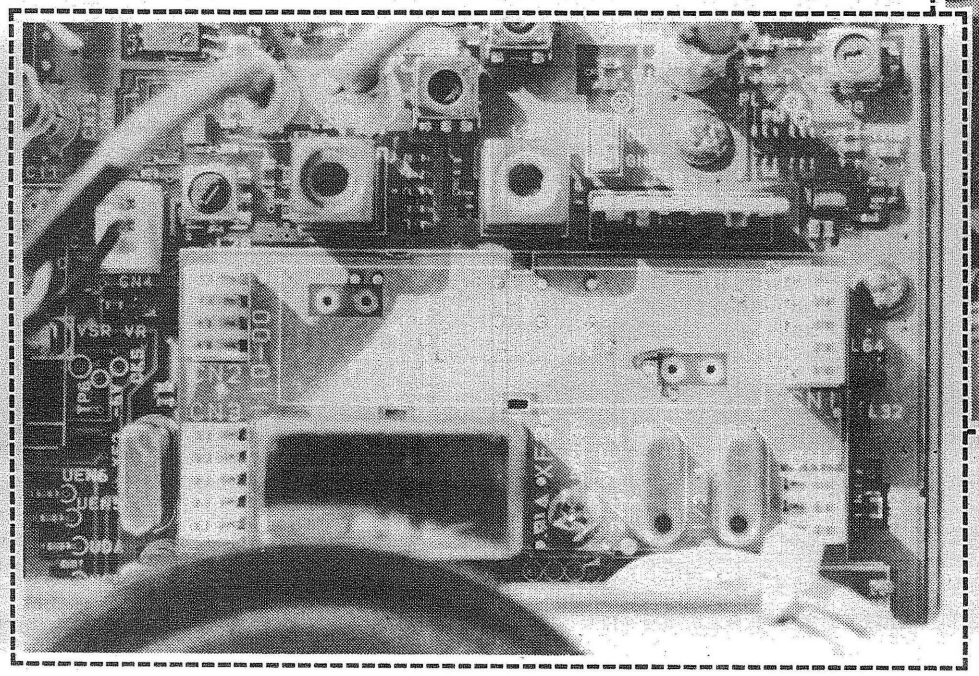
In the early days of radio and television, it took the "first phone" to work on AM and FM broadcast transmitters, or to work on commercial television apparatus. In fact, if the first class license station engineer was not on hand to take hourly meter readings at the transmitter, a disc jockey operating "combo" would need to hold the first class license and keep an accurate log of how the transmitter was glowing and how much current was going to each one of the directional antennas. Even though that DJ had really no idea what the difference between a tetroid and a triode was, he or she nonetheless passed the commercial test, and earned themselves the first class ticket for a late night, one-man (or one-woman) show doing combination talking and FCC log keeping.

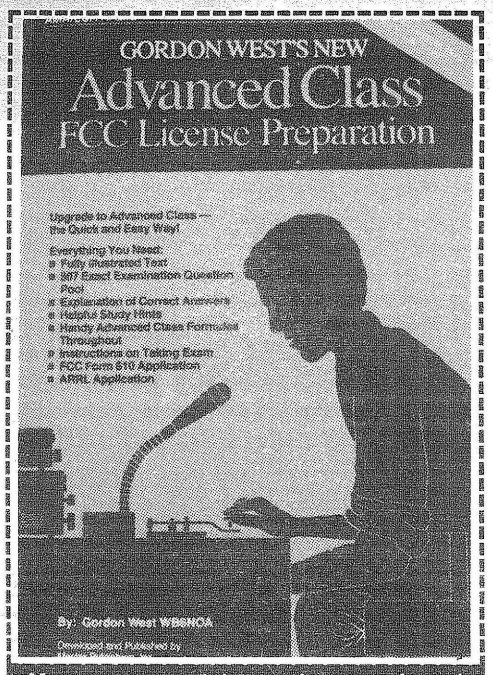
The second class ticket, just 20 years ago, was the big one in the two-way radio industry. To adjust the transmitter section of land mobile radios, marine radios, air radios, police radios, and aviation radios, you needed the second class license. If you worked on marine or air radar, you also needed the radar endorsement. The "second phone" was the ticket to get a job in two-way radio, and that second class ticket was also a prime commodity for many telephone companies who needed to hire licensed microwave personnel.

The third class ticket, just a few years ago, was what was required to run the radio equipment aboard certain aircraft and ships carrying passengers for hire. It was a relatively simple test, and studying for the third was akin to taking a driver's license written exam.

But studying for that *original* second class license was a whole different matter — it was a brain-buster from the word go. Just a few years ago, I counted over 460 completely different topic areas in communication electronics that you needed to know absolutely down cold in order to have a ghost of a chance of getting through the second class 100 multiple-choice exam. The FCC kept the questions absolutely secret, and rotated so many examinations through the system that there was no way someone could get through the test without tremendous knowledge of electronic problem-solving and a command of all of the rules and regulations for the various mobile radio services.

Getting the first ticket for the broadcast industry was relatively easy after you passed the second phone license. The first class ticket concentrated on AM and FM and television broadcast theory, so you had a real focus on





Many commercial questions are found in the Advanced and Extra class ham question pools!

what you needed to prepare for. But for the second class phone, you needed at least five thick textbooks, a couple of college courses in electronics, or enrollment for a six-month course in electronics through home study and classroom electronic training schools.

But things have changed now. A few years ago, the Federal Communications Commission deregulated the land mobile radio maintenance and repair credentials, allowing any qualified technician to get their hands into this radio equipment *without* a license as long as they knew what they were doing. And that rule still applies today — as long as that radio equipment is not used in the marine radio service, or the aviation radio service, or on shortwave commercial bands, NO LICENSE is required by the FCC to "sign off" your maintenance or repair of this equipment. Yet many land mobile employers still want to see an FCC license before they would consider you for a job. Same thing with many phone companies — no license, no promotion or no job.

When the FCC underwent huge cuts in its operating budget about six years ago, they cut back on their commercial testing program down to only a couple of times a year, and only for those applicants who could prove they had a job waiting for them if they passed either the theory or the commercial telegraphy examinations required to become a shipboard radio operator. There was also the rumor that the FCC was getting totally out of the testing business.

And that's exactly what they did — on September 2, 1993, the FCC completely redid the structure of the commercial general radiotelephone examinations, and turned over the test-giving to commercial operator license examination managers (COLEMS). The testing elements were divided into the following categories:

Commercial Radio License	Element Requirements
Marine operator permit	Ele 1. Rules & Regs
General radiotelephone operators license	Ele 1. Regs; Ele 3. Technical
Ship radar endorsement	Ele 8. Technical
GMDSS radio operator	Ele 1. Regs; Ele 7. Technical
GMDSS radio maintainer	Ele 1. Regs; Ele 2. Technical; Ele 9. More tech
Radiotelegraph	Ele 1. Regs; plus telegraphy and Morse Code tests varying in difficulty and speed with grade of telegraph liense

The FCC has now done away with the three different classes of commercial general radiotelephone license. To operate a boat radio when carrying passengers for hire, you take a 24-question test to end up with a MROP — marine radio operator permit. You can talk on the radio, but you can't go inside the marine radio and fix it.

The GROL (general radiotelephone operator's license) requires you to pass the Element 1 MROP, plus the 76-question test for the GROL. Once you pass, you can get into the insides of any type of radio equipment, specifically air, marine, and shortwave equipment. If you pass the 50-question radar endorsement test, you can work on radars, too.

So far the FCC has only issued the test questions for Elements 1 and 3 — the two most popular elements. The question pool contains ten times as many questions as what may be found on the exam. There are 170 questions for Element 1 rules and regs, and 729 questions for Element 3, the technical test. All questions are multiple-choice, AND ALL QUESTIONS ARE ISSUED INTO THE PUBLIC DOMAIN.

Read that statement again — PUBLIC DOMAIN. This means no more secret questions. Just like the FAA exams, what you study is ten times the amount of questions that could be on your exam, and one-tenth of all the questions you are studying will be the EXACT questions and their multiple-choice answers found on the exam.

Exact, word for word. The FAA has been doing this for years, and the plan has worked well.

Only Elements 1 and 3 are available at this time. Soon, other examination elements will be introduced into public domain, but due to a lack of response (interest?) from the general radio public, preparing the examinations has been a major job for FCC's George Dillon. Dillon needs all of the input possible to help create new test questions that are up-to-date and in time with today's technology. Questions on marine and aviation radar, plus questions for big-ship satellite communications equipment (GMDSS) are in need by Dillon. If you have input, he can tell you what he needs for a former or specific question sets.

The public question pool — all 170 rules and regs questions, plus all 729 technical questions, plus the four A-B-C-D multiple-choice answers, plus an answer key in the back — is available for $13.00 (which includes postage) from Gordon West Radio School, 2414 College Drive, Costa Mesa, California 92626.

And here is some real interesting news on the Element 3 technical questions — due to the poor response by the general technical public for submitting possible questions, the Federal Communications Commission "stole" good questions with well-researched, right-and-wrong answers *directly* from the amateur radio Advanced and Extra class question pools. When you order your $13.00 test prep book from Radio School, you will also receive a conversion sheet which illustrates where to find the detailed explanations on how to solve for these questions out of Gordon West Radio Shack Advanced class and Extra class amateur radio theory books. Approximately 75 percent of all the test questions are straight out of the Advanced and Extra class Radio Shack ham books!

The other 25 percent of the technical questions are relatively straightforward, and can be researched with the following recommended publications:

Electronic Communication, Shrader, McGraw-Hill, Inc.

Radio Operator's License Q & A Manual, Kaufman, Hayden Books, Division Sams

GROL Study Guide, LeBlanc, Tab Books, Division McGraw-Hill

Practice Tests GROL, Veley, Tab Books

Basic Electronic Communications, Veley, Tab Books

Ham Radio Advanced & Extra Class, West, all Radio Shacks

Marine Radio Technical Handbook, Noll, WPT Publications

ARRL Handbook, American Radio Relay League

"Be assured that land mobile radio shops, marine radio dealers, and avionics radio repair stations are always on the lookout for trained and qualified licensed technicians — the license is one additional proof that you are credentialed by the FCC to sign off equipment," comments Marc Churgel, KI6TU, a COLEM test manager.

"But passing the new examination alone is no guarantee that you will be able to fix any piece of equipment that comes across your test bench — that is something you will need to prove to anyone who may hire you based on your credentials," states Churgel. Good point — even though you may have passed the Elements 1 and 3 examinations for the GROL, you still need to possess the technical background and training needed to repair and maintain radio equipment where lives depend on that gear to get a message out for help in an emergency. Having a license is only one step of many accomplishments to be a good radio technician.

If all this sounds interesting, get a set of the questions, and see how much you already know. If you can score at least 75 percent on a "cold test" based on your present experience in mobile radio, chances are you're going to have terrific job opportunities just waiting for you around the corner after the test.

But if all of the questions look absolutely foreign to you, and if you have no experience in two-way radio, study for the test, pass it, and then get into a correspondence school or college course where you can now back up your license with those skills necessary to fix and maintain two-way radios in the air, at sea, or anything that may come across your work bench. **NV**

COMMERCIAL FCC LICENSE QUESTION POOL

The commercial radio operator's Element 1 and Element 3 question pools were released to the public on September 2, 1993. The new Gordon West Commercial Radio Operator's Element 1 and 3 Study Guide will become available in the Spring of 1994. It is being written right now as you read this.

More than two-thirds of the technical Element 3 questions are identical to the amateur radio FCC Element 4A and 4B question pools. The Gordon West Advanced class Element 4A test preparation book, plus the Extra class Element 4B test preparation manual will contain all of the steps on how to solve the problems for these common-pool questions.

Here is the cross-reference information to assist students in their pre-study for the commercial general radiotelephone examination:

Commercial Sub-element	Amateur Radio Sub-element
3A1-3A5	ADV. 4AB-1.1 - 4AB-1.5
3A6-3A18	XTRA 4BB-1A.1 - 4BB-2A.9
3A19-3A41	New questions
3B1-3B10	ADV. 4AC-2.1 - 4AC-4.5
3B11-3B14	XTRA 4BC-2.1 - 4BC-3.3
3B15-3B22	New questions
3C1-3C39	ADV. 4AD-1.1 - 4AD-7.3
3C40-3C51	XTRA 4BD-1A.1 - 4BD-A.3
3C52-3C97	New questions
3D1-3D40	ADV. 4AE-1.1 - 4A-8.10
3D41-3D96	XTRA 4BE-1.1 - 4BE-6B.5
3D97-3D115	New questions
3E1-3E46	ADV. 4AF-1.2 - 4AF-5.5
3E47-3E72	XTRA 4BF-1A.1 - 4BF-5.3
3E73-3E75	New questions
3F1-3F72	ADV. 4AG-1.1 - 4AG-9.7
3F73-3F110	XTRA 4BG-1A.1 - 4BG-4B.3
3F111	New question
3F112-3F130	XTRA 4BG-4B.5 - 4BG-8.2
3F131-3F139	New questions
3G1-3G58	ADV. 4AH-1.1 - 4AH-10.2
3G59-3G93	XTRA 4BH-1A.1 - 4BH-6A.3
3G94-3G97	New questions
3H1-3H45	ADV. 4AI-1.1 - 4AI-12.4
3H46-3H76	XTRA 4BI-1A.1 - 4BI-6D.2
3H77-3H143	New questions